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G. R. S. IX-5]

Previous references.

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Later references.

File No. 82-18

Serial Nos.

(a)

GENERAL AND REVENUE SECRETARIAT.

Serial Nos.

Part B for Forest 4/18

SUBJECT.

Investigation of Raw materials for cement manufacture

W D 88—GPB—50,000—24-7-16

G. R. S. III-1]

191 .

GENERAL AND REVENUE SECRETARIAT

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NOTES.

File No. 82-18

FILE HEADING.

Investigation of raw materials for cement manufacture

From

No.		Dated		Received	
Diary No.	]	Enclos.	Spare Copies.	[	Serial No.

BRIEF ABSTRACT OF LETTERS.

NOTES AND ORDERS.

NOTES—First Sheet.

G.R.S. III—3]

ROUTINE NOTES.

[To be used only for notes, requisitions, etc., not intended for permanent record.]

I submit herewith for perusal the correspondence between the Director of Industries and Commerce and the Director of Geology in the matter of investigation of raw materials for cement manufacture.

2 Suitable instructions may issue to the Director of Geology to carry on the investigation, if approved.

Extra member

18/9/18

I shall be glad to speak to the Ch. Secy about this

20.9.18

4 No action necessary.

N. B.—*Should routine notes be written on small slips, the notes must be copied or slips pasted on this form.*

GRSM.592 & the collection 28-18 Sls 1+2 has been taken by me for B/N. 2777.

Govt 82-18-1 3

DEPARTMENT OF MINES AND GEOLOGY,
MYSORE STATE.

Bangalore. 13th September 1918.

CONFIDENTIAL.

No. 748/Gen. 3.

Dear Sir,

I am herewith sending you a copy of the letter addressed to me by the Director of Industries and Commerce Department and my reply to it.

You will see that the subject matter and the wording of the Director's letter are not very gratifying and happy.

In the interests of Government it seems my duty to point out that duplication of work is not conducive to efficient economic work.

We should have no objection whatever for the Director of Industries and Commerce to undertake the investigation of any mineral or rock in the State for the purpose of his industries, provided he has the necessary competent staff for carrying out such work.

But we know that he hasn't any such staff and the one officer he has in Mr. Vyasa Rao does not appear to be a reliable economic Geologist.

Even we haven't got the required staff and equipment for carrying on the industrial mineral investigations.

The matter is serious and deserves a careful consideration and a speedy correction.

Yours sincerely,

B. Jaya Rao.

T.S.Balasundaram Iyer, Esq., B.A.,
Chief Secy. to Govt. of H.H. the
Maharaja of Mysore, Bangalore.

Letter No.723, dated 11-9-1918, from the Offg. Director, Department of Geology, to the Offg. Director of Industries and Commerce, Bangalore.

In reply to your letter No.1436, dated 13/14th August 1918, I have the honor to state that the question of investigating the raw materials for the manufacture of Cement has been engaging the attention of this Department for some years.

A succinct note on the possibilities of cement manufacture in the Mysore State has been published as long ago as 1916 on pages 179 and 180 of the Mineral Bulletin No.7.

That the subject has been continually kept in view will be seen from the mentions made on pages 22 of the Administration Reports for the years 1916-17 and 1917-18.

Besides, the Industries and Commerce Committee have thoroughly discussed and decided that such of the raw materials (pertaining to soils, rocks and minerals) required for the Mineral, Agricultural and Chemical industries should be investigated by this Department.

In the light of these facts that I should be asked to answer your statements (1) "and am desired by the Government to find out if the Department of Mines and Geology would undertake to have the raw materials for cement manufacture investigated," (2) "In case you are unable to undertake the work, have you any objection for one of our officers to do this work," seems disheartening and difficult to understand.

However, I shall deem it a favour if you will kindly communicate to Government the keenness we feel in continuing our investigations in the matter and that you cannot very well expect us to admit our inability to undertake the work on which we have already bestowed a great deal of time and our thought.

With

With regard to Mr. Vyasa Rao's note enclosed for my information, I have read through it carefully and regret to say that I cannot agree with his recommendations.

While carefully examining the limestone deposits of Voblapur for the purpose of Cyanamide industry, Mr.Forbes and myself went into the question of testing the limestone and did not think it necessary to have recourse to close drilling as now recommended by Mr. Vyasa Rao.

Boring and close drilling operations would have been necessary if the geological conditions at Voblapur had been different and if the limestone had been obscured or hidden or covered by any thick capping of soil, forest debris or heavy overburden. Fortunately our conditions are so favourable as to save us from wasting time and money on what we at present consider unnecessary drilling or boring tests and more chemical analysis. Our difficulty at present is not so much the uncertainty of obtaining sufficient quantities of the even grade limestone as it is to find enough suitable quality of material required for the several industries.

The Voblapur limestone is at present depended upon to meet the requirements of the iron and cyanamide industries. It consists of two varieties, viz,- the high calcium and the magnesian or dolomite kinds. The high calcium variety, which unfortunately does not occur in unlimited quantities, is the only limestone so far known in the State, that may probably be suitable for the manufacture of cyanamide and as such it deserves to be reserved for that industry. The magnesian or the dolomite variety is not fitted for cyanamide or cement manufacture, though it would be all right as a flux for the iron smelting scheme.

In fact even the high calcium kind does not make a good cement-stone as it contains not enough pereentage of silica. Besides, we want argillaceous clays and shales for the cement manufacture.

Recent

Recent work has shown that the limestone deposit to the east of Javagondanahalli on the Sira-Chitaldrug road is capable of yielding sufficient quantities of limestone, which appears to be admirably suited for the manufacture of cement.

For two average bulk samples taken along half-a-mile length of the outcrop have yielded chemical results, which show that the limestone is of the high calcium variety containing about 47 to 48% of CAO, less than 1% of MGO and more than 10% of SIO_2, conditions approaching a "natural cement"-stone.

In addition to the limestone a suitable clay or shale is required and the presence of a suitable supply has not been investigated yet.

Besides, cement making is a delicate and tricky operation and wants investigation by experts.

In conclusion I wish to say that this Department will work up all the necessary details on the subject before calling in expert aid and starting a cement industry.

"COPY"

B. Jaya Ram.
Offg. Director,
Department of Geology.

Letter No.1436, dated 13/14th August 1918, from the Offg. Director of Industries and Commerce, to the Offg. Director, Department of Mines and Geology, Bangalore.

The question of the manufacture of cement in Mysore is engaging the attention of Government and the Department of Industries have been asked to investigate the suitability of the Voblapur limestone deposits.

2. I understand that the Department of Mines and Geology is engaged in the exploration of the area for the supply of flux in connection with the Iron Scheme and limestone for the cyanamide industry and am desired by Government to find out if the Department of Mines and Geology would undertake to have the question of the raw materials for cement manufacture investigated. In case you are unable to undertake this work, have you any objection for one of our officers to do this work? A copy of Mr. Vyasa Rao's note to the Government is herewith enclosed for your information.

"COPY"

B. Jayaram
Offg. Director,
Department of Geology.

NOTE ON LIMESTONE NEAR VOBLAPUR.

On the geological map of this area 13 bands of patches of limestone have been marked, the longest of which is about a mile and a half. The width, measuring off from scale appears to be about 400 feet constant for every band. Of these, about eight are aligned in three lines and probably may be continuous below a dolomite cap in which case we have there a-mile-and-a-half-long bands. Two more may go together and yield a half-a-mile band. The remaining three are short independent ones and are located close to Voblapur village.

The Geological Department have carefully examined the surface and collected samples big and small and analysed them on the results of which they have demarcated the above bands as high calcium limestone from the ? containing magnesium limestone or dolomite. Except at one point where two bands are close together, no pits or trenches were sunk on these bands. Of the three pits two were sampled at every foot depth and analysed with evident satisfactory results which I take, did not clash with the results from surface samples. How far these pits were carried down and what was the result on the remaining pit, we are awaiting to hear from the Geological Department.

From the above it is clear that the work done so far by the Geological Department results in this: (1) that certain limestone bands do exist in the Voblapur dolomite area, (2) that the samples from surface show it to be high grade, (3) and if the bands continue in depth with the same width and quality a large quantity of high grade limestone would be available from this area. This means a clear case has been made out for laying out money for detailed prospecting Unless we are assured that the limestone bands are not merely blanket deposits, or shallow patches and that they lend themselves to easy working and are not too profusely mixed up with dolomite

and

foreign matter to make them too costly to exploit and also ...t the quality does not vary widely over each band, no com-...rcial undertaking could be recommended, much less the manu-...cture of cement, where an even grade of stone is a vital ...essity. To examine these bands, particularly the longest, ... it promises to yield the largest quantity, from surface ...ow, close drilling is essential. I have been using the ...ll-boring machine in the exploration of clays and believe ... is is quite enough for drilling shallow holes in limestone. ... it is not intended to go deeper than 50 ft. from surface, ... equipment supplied with the tool is adequate for this work ... no supplementaries are needed. One hole for every hundred ...et of width and five hundred feet of length and fifty feet ...p would be 4250 ft. of drilling to explore the one and half ...le band. Samples for every ten feet of depth for each hole ... analyses thereof would give us 500 analyses. If the ...ults prove our expectations we should have 5,000,000 tons ... limestone, - the quality of which we could thoroughly depend ...on. Boring with the chisel bit in limestone should be easy ... will probably not cost more than Re.1/- per foot. Boring ...ith the diamond hand drills usually cost Rs.3/- per foot and ... contract rate for such drilling in this kind of rock is as ... as Rs.5/- per foot, but then the latter could go nearly ... feet depth. It will be noted that we can do quite cheaply ... deal of prospecting and collect valuable information for a ... about a fifth of what it usually costs elsewhere. Taking ... total drilling to be about 5000 feet, the cost of this work ...ll be Rs.5,000/- and at Rs.5/- per analysis Rs.2,500/- for ... samples. Rs.7,500/- spent on this exploration would yield ... valuable results and make our limestone position quite strong ...ither for a cement industry or any other concern where a good ...liable quality of limestone is a necessity. Five drills working ... time, the work should not take more than one working season ... complete.

Sd/ R. Vyasa Rao,
Spl.Officer for Mineral Industries.

"COPY"

B. Jayaram.
Offg.Director,
Department of Geology.